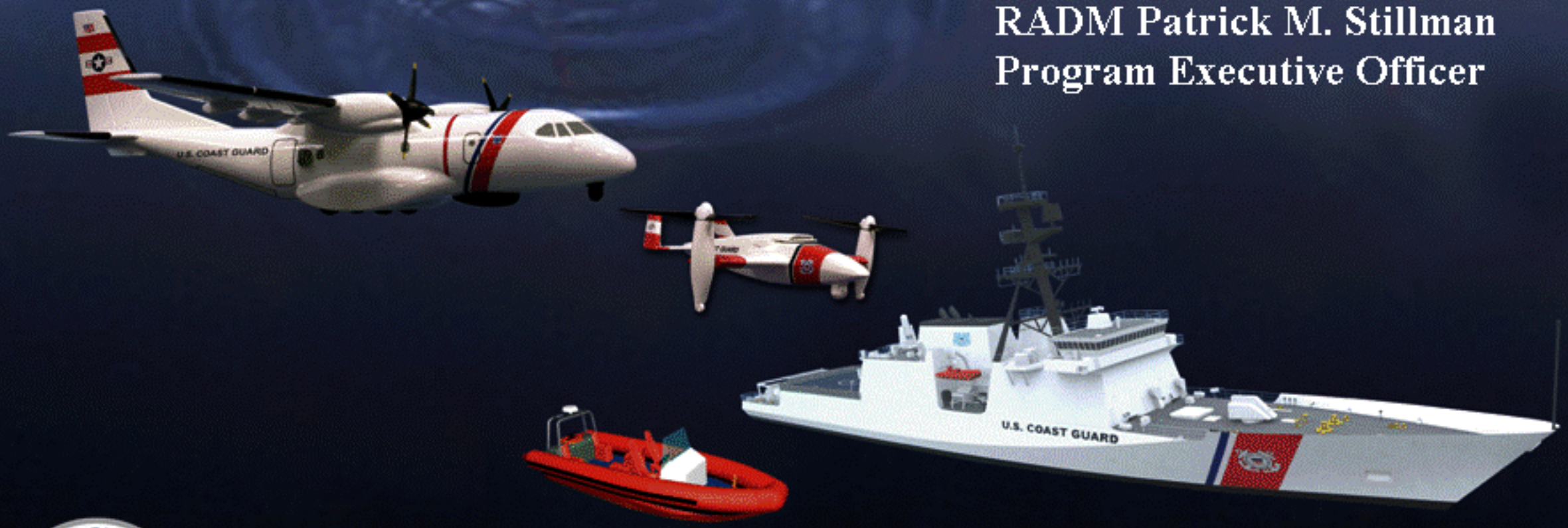
Shaping Maritime Homeland Security

Integrated Deepwater System (IDS) Program

16 December 2004

RADM Patrick M. Stillman
Program Executive Officer



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Agenda

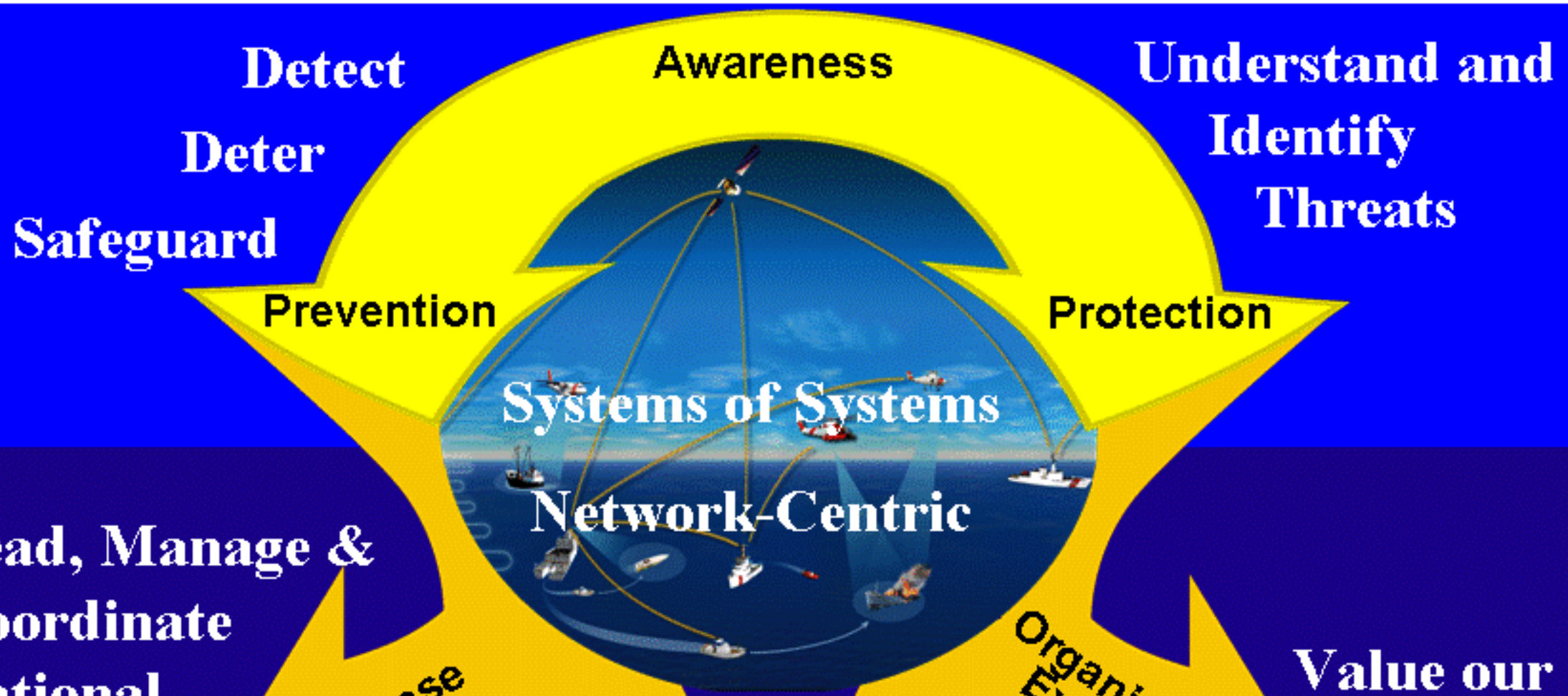
DHS Strategic Plan

System of Systems

Coast Guard VUAV Program

Conclusion

DHS Strategic Plan



Maritime Security Strategic Imperatives

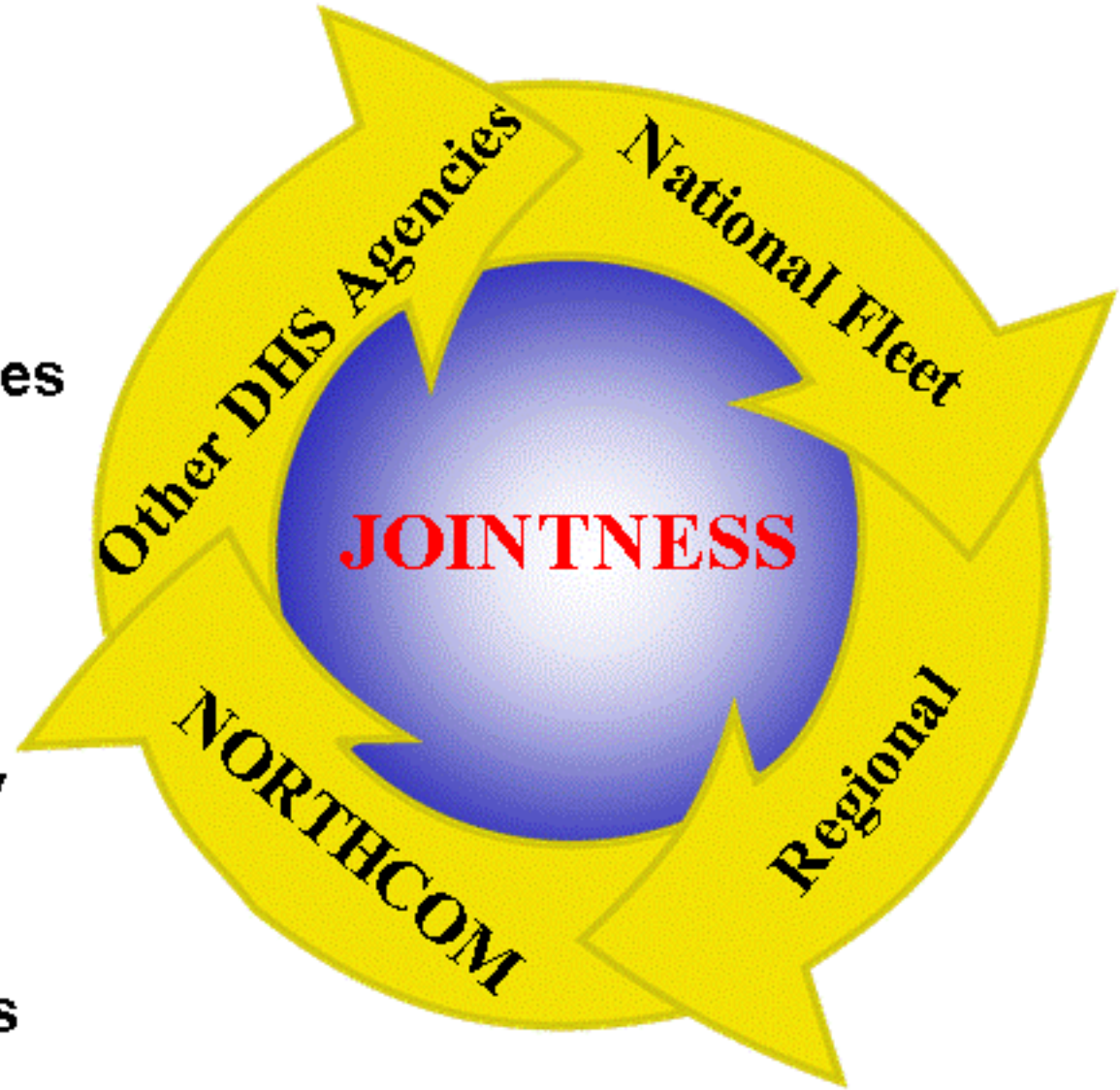
SHAPE the Global Maritime Setting
KNOW Maritime Conditions, Anomalies, and Threats

LEAD Maritime Security Operations
POSITION USCG to Execute Maritime Security

Strategic Security Partnerships

Areas of synergistic effort with Deepwater

- Interconnectivity
  - Real-time, protected communications across all agencies
  - Automated access to other agencies' data bases
- Interoperability
  - Units that can function seamlessly
  - A common operating picture
  - Coordinated acquisition processes



System Solution – Network Centric

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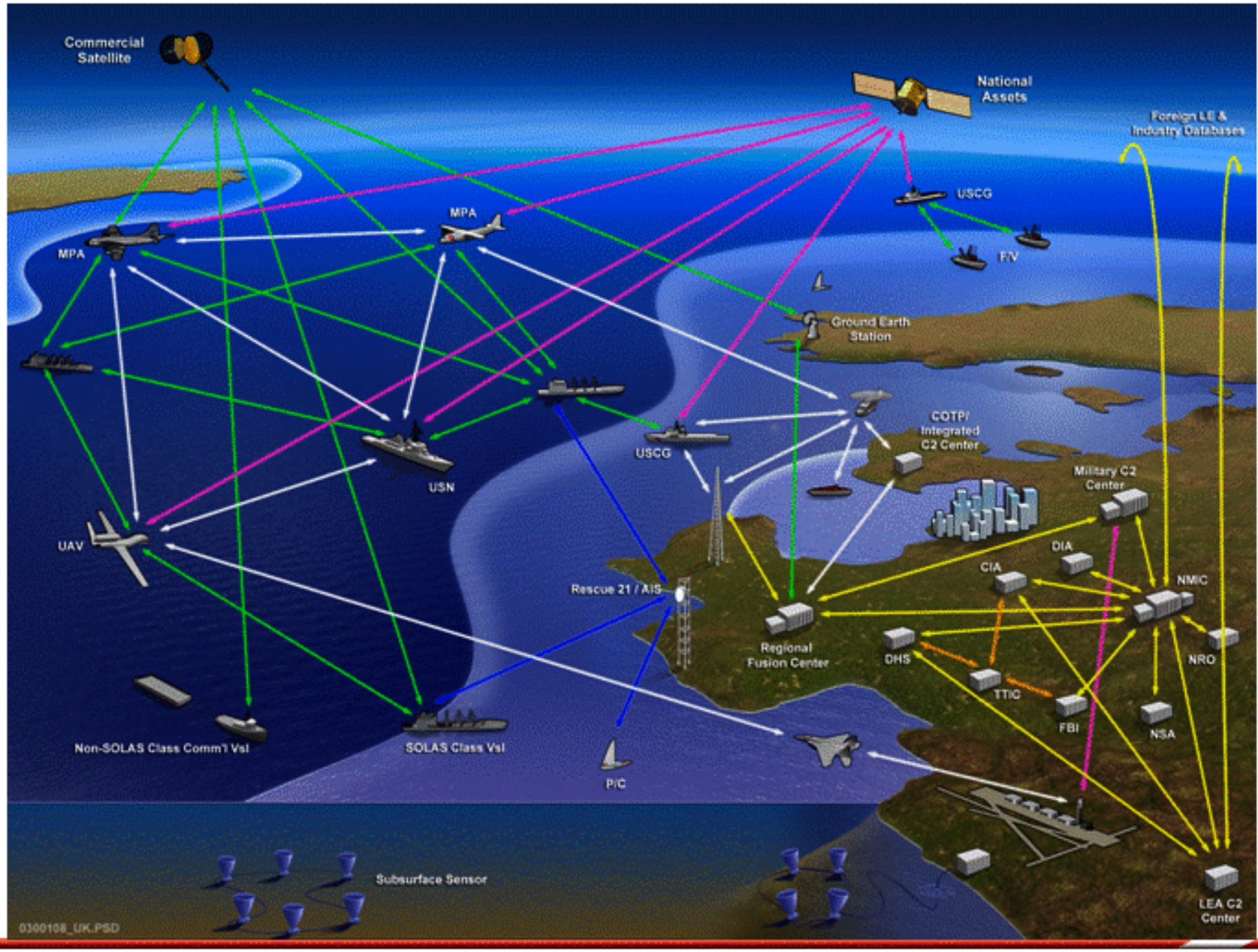
Maritime Domain Awareness



Maritime Domain Awareness is the **effective understanding** of **anything associated with** the global maritime environment that could impact the **security, safety, economy, or environment** of the United States.

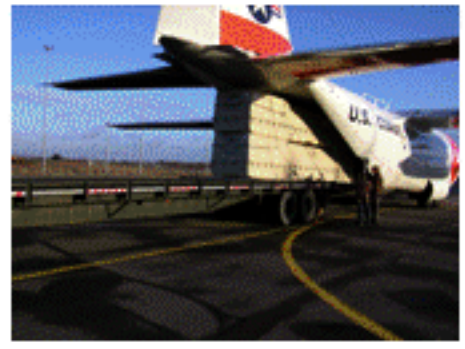
USCG UAV Status/Way Ahead

Purpose

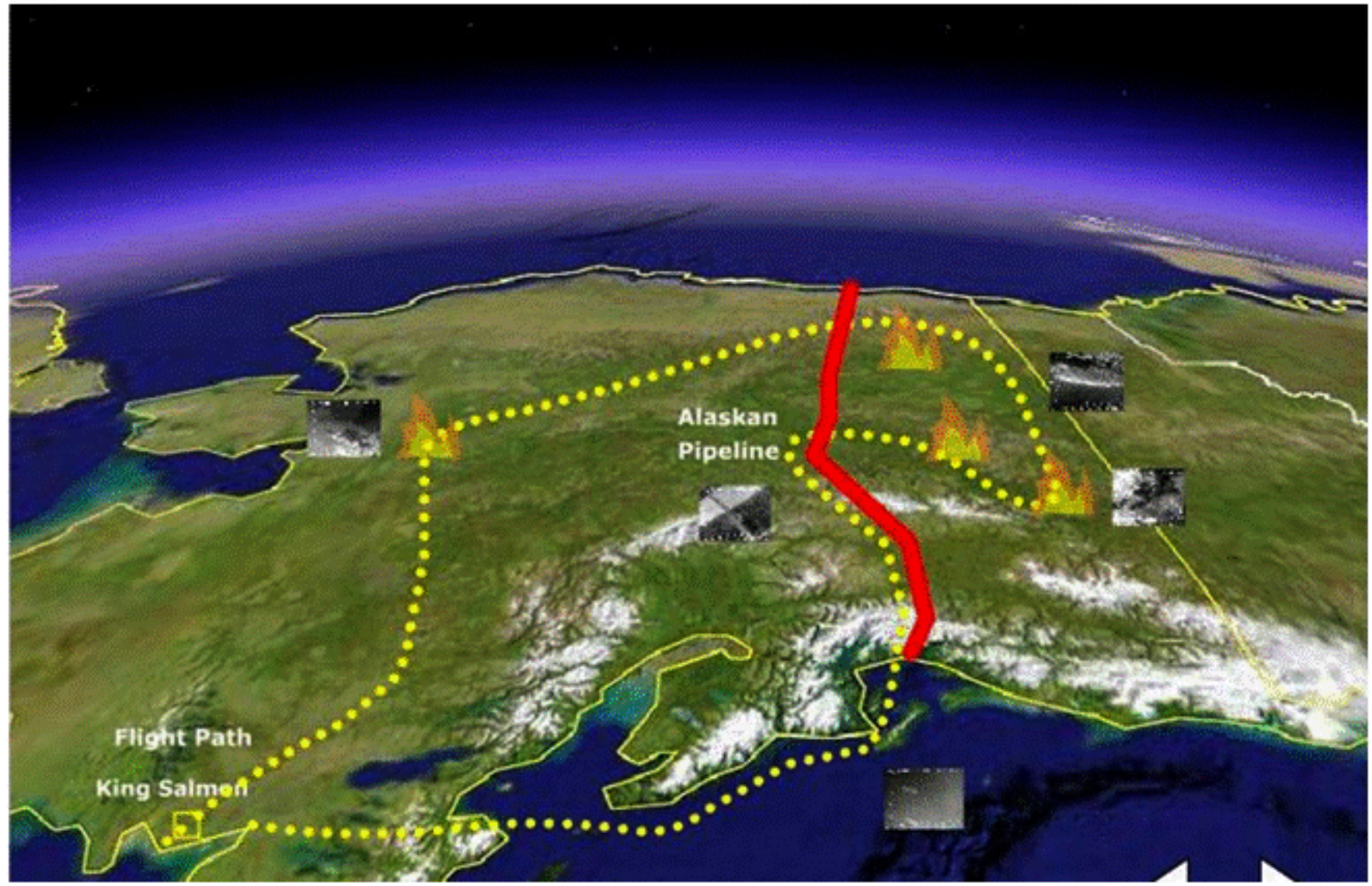
The U.S. Coast Guard has been engaged in a series of live and synthetic experiments over the past two years to examine the characteristics and employment of Uninhabited Aerial Vehicles (UAV's) in support of its maritime missions. The focus of this and the previous years exercise was to gather operational data points to substantiate modeling and simulations used to validate MALE/HALE UAV operations in support of CG missions as a cost effective enhancement to current manned platforms.

Results

- Long Endurance: The Altair flew for more than 16hrs, returning to base with only half of its useable fuel expended.
- High Altitude Ops & Flexibility: UAV loitered at altitudes from 10,000 – 45,000 ft MSL. Demonstrated ability to adjust altitude to accommodate optimal sensor capability.
- Successfully deployed all equipment with organic USCG lift capability. Required two C-130Js & one C-130H to transport all equipment.



Results



- FAA Certificate of Authorization (COA): Successfully obtained COA that permitted flight through four Air Traffic Control Centers. Seamlessly integrated into the National Airspace System without impeding commercial air traffic.
- Successfully negotiated emergency COA with FAA in two hours, permitted multiple flights into the Alaskan Interior to support critical Fire Fighting Activities.

VUAV Surveillance Capabilities

Bell HV-911 (Eagle Eye)

- The Eagle Eye is a short-range VUAV that can take off or land from shore or a ship without the need of a runway.
- The Eagle Eye is a mid-wing monoplane tilt rotor with prop-rotors mounted in pivoting nacelles on each wing tip.
- It will take off and land vertically with the nacelles vertical (helicopter mode) and tilt its nacelles forward to a zero degree position (airplane mode) for the high-speed, high fuel-efficiency flight of a conventional turboprop airplane.
- A prototype of this asset currently exists and has flown over 100 flight hours. Characteristics of this asset include a five-hour endurance with a maximum range of 750 NM with a cruise speed of 200 knots.
- This asset will perform search and rescue, enforcement of laws and treaties including illegal drug interdiction, marine environmental protection and military readiness.

VUAV Program Description

- Successfully Completed VUAV Preliminary Design Review (PDR) - 29 January 2004
- Entered into VUAV System Design Phase - 4 February 2004.
  - VUAV System Design in Progress and On Track.
  - Critical Design Review (CDR) January 2005
- VUAV Developmental Tests and Operational Tests
  - Development Tests
    - Ground Tests - April 2006
    - Shipboard Test on Maritime Security Cutter, Large - December 2006
  - Operational Tests
    - Operational Test on Maritime Security Cutter, Large - September 2007
- Initial Operational Capability (IOC) - April 2008
  - Three Production VUAVs
  - Two Ground Control Stations (GCS)

High Altitude Unmanned Air Vehicle (HAUAV) Characteristics

Northrop Grumman RQ-4A High Altitude (UAV) – Delivery 2016

General Characteristics

- DoD Surveillance Asset
- Low Risk After USAF Production, Testing, Fielding
- Huge Surveillance Areas Covered per Mission
- >3,000 nm Range, >30 Hours Endurance
- High-resolution Sensors (FLIR/EO, SAR, ISAR/GMTI)
- Range Endurance Allows Operation from Only 2 Sites
- Centralized Control from Ground Control Station
- GCS Integrated into CG-C2 System

General Specifications

- Power Plant: Single Allison AE3007H (Approximately 7,000 Pounds Thrust)
- Length: 44 feet
- Height: 15 feet
- Weight: Approximately 25,600 Gross Take-off Pounds
- Wingspan: 116 feet
- Speed: 300 to 400 Kt True Air Speed (KTAS)
- Range: 1,200 nm Radius with 24 Hours On Station
- Loiter Altitude: 50,000 to 65,000 feet
- Fuel Capacity: 14,800 Pounds, JP-8

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Conclusion

- Effective risk mitigation . . . both safety and security . . . in the maritime . . . is about awareness.
- Leverage technology and partnerships to collect, consolidate, analyze and sort multiple information sources.
- Obtain the right capabilities and the right capacity to grow, modernize and realign our force.
- High/Medium Altitude, Long Endurance UAV's show potential for Broad Area Maritime Surveillance.
- Additional research is needed to optimize sensor systems and to address critical control & connectivity issues at the higher latitudes.
- The Coast Guard continues to seek opportunities for additional experience with MALE/HALE UAV operations and potential synergies of an integrated UAV solution within DHS/DoD.

Visit the IDS Web Page for latest Developments

Address http://www.uscg.mil/hq/g-a/deepwater/

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Integrated Deepwater System

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SHOWCASING THE NEW MARITIME DOMAIN AWARENESS CENTER (MDAC)

Admiral Thomas H. Collins, Commandant of the U.S. Coast Guard, joined New Jersey Congressmen Jim Saxton and Frank LoBiondo to assist representatives from Lockheed Martin and Northrop Grumman during the ribbon-cutting ceremony opening the Maritime Domain Awareness Center (MDAC) at the Lockheed Martin facilities in Moorestown, New Jersey on Friday, April 23, 2004.

The new $9.4 million MDAC is a 46,000-square foot state-of-the-art facility designed to develop, test, and integrate assets and systems being produced to support the Coast Guard's Integrated Deepwater System (IDS) and other Homeland Security programs. One of nine labs in the Maritime Systems Engineering Center (MSEC), the MDAC facility can perform development, integration, installation, checkout, and acceptance testing of C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance, and

NEW TO THE PROGRAM?

The Integrated Deepwater System is critical to the Coast Guard's future and to America's ability to safeguard our homeland and maritime security for generations to come. Learn more about the IDS Program.

INTERESTED IN THE STATUS OF THE IDS PROGRAM?

Keep up-to-date on the IDS Program by checking out our Recent Milestones and the planned phases for Deepwater assets.

IN THE NEWS...

RAND Study: The U.S. Coast Guard's Deepwater Force Modernization Plan: Can It Be Accelerated? Will It Meet Changing Security Needs?

Check us out: www.uscg.mil/deepwater